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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,942	01/31/2002	Christopher Beatty	10970794-9	2010

7590 08/21/2003
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
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EXAMINER

AHMED, SHAMIM

ART UNIT PAPER NUMBER

1765

DATE MAILED: 08/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/059,942

Applicant(s)

BEATTY ET AL.

Examiner

Shamim Ahmed

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Remarks

The preamendment filed 1/29/02 (paper No.5) added new claims 2-7, which are renumbered as claims 7-12 according to Rule 1.126.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action: Page 2

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kubby (5,851,412).

Kubby discloses a thermal inkjet print head with a heating or firing resistor in each ejector having a substrate with a first surface, an opposite substantially parallel second surface and an edge surface extending from the first surface to the second surface (col. 3, lines 21-30 and figure 5).

Kubby also discloses that a first layer is formed over the substrate or the die and defines a plurality of firing or heating resistors on the first layer (col.4, lines 10-13 and lines 45-49).

Kubby teaches that a fluid channel (cavity 16) is formed by etching the exposed surface of the first surface, wherein the firing or heating resistor is disposed over the first surface (see figures 4 and 5).

Kubby also teaches that a ink feed channel is formed by etching the substrate through the first surface and a firing chamber (cavity or capillary channel 32) is disposed over the heating elements, wherein the fluid in the firing chamber is heated by the heating elements and ejected from the firing chamber (col.3, lines 54-59 and also see figure 5).

Kubby further teaches that the fluid channel and the fluid feed channel are substantially located between the thin film structure having heating resistors (figure 5).

Kubby inherently teaches that the ink feed channel includes a refill channel.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubby (5,851,412) as applied to claims 7-10 above, and further in view of Wong et al (5,211,806).

Kubby discussed above in the paragraph 2 but fails to teach that the fluid channel and the ink or fluid reservoir are fluidically arranged in a no-parallel manner.

However, it would have been obvious to one skilled in the art at the time of claimed invention to modify the arrangement of the fluid channel for easily and quickly refill the fluid reservoir as evidenced by Wong et al as an obvious design choice of an fluid ejection head.

Wong et al shows a fill hole (30) is formed on the substrate, which hole is fluidically coupled with the fluid channel or fluid reservoir (24) (see figure 12).

Therefore, it would have been obvious to one skilled in the art at the time of claimed invention to modify Kubby's process by employing Wong et al's teaching for easily and quickly refilling the fluid reservoir.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pan (4,894,664) discloses a method of forming ink jet print head, wherein a heating element disposed in between a fluid channel and fluid ejection chamber.

Figueredo et al (USP 6,153,114) disclose a method for fabricating a thin-film printhead device and Aden et al (USP 4,809,428) disclose a process for manufacturing a thin film resistor substrate for ink jet printhead.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (703) 305-1929. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G Norton can be reached on (703) 305-2667. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Shamim Ahmed
Examiner
Art Unit 1765

SA
August 9, 2003

NADINE G. NORTON
PRIMARY EXAMINER

